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CLAIMS

1. A method of constructing an artificial spoken language, comprising the steps of:
 - providing a set of phonemes or other utterance elements chosen for their low risk of
 - 5 confusion one with another by a speech recogniser,
 - creating words by assembling together said phonemes/utterance elements, and
 - storing the set of created words as a new said artificial spoken language.
2. A method according to claim 1, further comprising the step of creating grammar rules
- 10 and storing them as part of the said artificial language.
3. A method according to claim 1, wherein said phonemes / utterance elements are all
chosen from the same human language.
- 15 4. A method according to claim 3, wherein the human language is Esperanto or English..
5. Apparatus for use in constructing an artificial spoken language, the apparatus
comprising:
 - a presentation subsystem for presenting to a user a set of phonemes or other utterance
 - 20 elements chosen for their low risk of confusion one with another by a speech
recogniser,
 - a user input subsystem for enabling a user to create words by assembling together said
phonemes/utterance elements, and
 - a storage subsystem for storing the set of created words as a new said artificial
 - 25 language.
6. Apparatus according to claim 5, further comprising means for inputting grammar rules
and storing them as part of the said artificial language.
- 30 7. Apparatus according to claim 5, wherein said phonemes / utterance elements are all
from the same human language.

8. A method of controlling apparatus wherein a user uses an artificial language to instruct the apparatus by voice input, the apparatus having an associated speech recogniser and said artificial language being made up of words formed from a set of phonemes, or other utterance elements, chosen for their low risk of confusion one with another by the speech recogniser.
9. A method according to claim 8, wherein the language includes associated grammar rules.
10. A method according to claim 8, wherein said phonemes / utterance elements are all from the same human language.
11. Apparatus provided with a voice-input interface including a speech recogniser adapted to recognise input in the form of an artificial language made up of words formed from a set of phonemes, or other utterance elements, chosen for their low risk of confusion one with another by the speech recogniser.
12. Apparatus according to claim 11, wherein the speech recogniser is operative to use grammar rules associated with said artificial language.
13. Apparatus according to claim 11, wherein said phonemes / utterance elements are all from the same human language.
14. An artificial spoken language for apparatus control, the language being made up of words formed from a set of phonemes, or other utterance elements, chosen for their low risk of confusion one with another by a speech recogniser.
15. An artificial spoken language according to claim 14, wherein the language includes associated grammar rules.

16. An artificial spoken language according to claim 14, wherein said phonemes /
utterance elements are all from the same human language.
17. An artificial spoken language according to claim 16, wherein the human language is
5 Esperanto or English..
18. A computer-readable storage media holding the artificial language of claim 14.
19. A speech recogniser for use by multiple devices that have different associated artificial
10 languages each according to claim 5, the speech recogniser being adapted to receive in
association with particular voice input, an indication of the identity of the artificial
language used for the input.
20. A training system for teaching a person to use an artificial language, the system
15 including:
- an input subsystem for receiving voice input from the user,
 - an analysis subsystem for detecting errors in the pronunciation and/or grammar of the
voice input as compared to an expected input that conforms with said artificial
language, and
 - 20 - an output subsystem for providing feedback to the user concerning the detected errors;
said artificial language being made up of words formed from a set of phonemes, or other
utterance elements, chosen for their low risk of confusion one with another by a speech
recogniser.
- 25 21. A method of automatically generating candidate artificial spoken language words, the
method involving a process that is specifically set to favour artificial-language words
which are more easily correctly recognised by a speech recognition system.
22. A method according to claim 21, wherein said process involves creating words in a
30 manner favouring words that are more easily recognised by a speech recognition system .

23. A method according to claim 22, wherein the creation of words in a manner favouring words that are more easily recognised by a speech recognition system, is effected by choosing phoneme and phoneme combinations which according to a confusion matrix established for a target speech recognition system, are less likely to be confused.

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24. A method according to claim 21, wherein said process involves evaluating the words in terms of how easily they are correctly recognised by a speech recognition system and selecting those that are more easily recognised.

10 25. A method according to claim 24, wherein the evaluation of words in terms of how easily they are correctly recognised by a speech recognition system is effected by analysis of the phoneme composition of the words in relation to a confusion matrix established for a target speech recognition system.

15 26. A method according to claim 24, wherein the evaluation of words in terms of how easily they are correctly recognised by a speech recognition system is effected by presenting the words to a speech recognition system and measuring the resultant recognition performance.

20 27. A method according to claim 26, wherein said evaluation is effected by having the words spoken by a text-to-speech conversion system to the speech recogniser system.

25 28. A method according to claim 27, wherein the channel involving the text-to-speech conversion system and the speech recogniser system is implemented in a manner such that said measure takes account of at least one of:

- gender independence, for which purpose the text-to-speech system is provided with multiple text-to-speech converters corresponding to different genders to generate spoken versions of the words;
 - acoustic independence, for which purpose the speech recognizer system is provided with multiple speech recognizers corresponding to different acoustic models;
 - robustness to noise, for which purpose noise is introduced into the channel.
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29. A set of artificial-language words created by a method according to claim 23.

30. A computer-readable storage media storing artificial-language words created by a method according to claim 23.

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31. Apparatus including a speech recognition system set to recognise artificial-language words created by a method according to claim 23.

32. A set of artificial-language words created by a method according to claim 24.

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33. A computer-readable storage media storing artificial-language words created by a method according to claim 24.

34. Apparatus including a speech recognition system set to recognise artificial-language words created by a method according to claim 24.

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35. A set of artificial-language words created by a method according to claim 26.

36. A computer-readable storage media storing artificial-language words created by a method according to claim 26.

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37. Apparatus including a speech recognition system set to recognise artificial-language words created by a method according to claim 26.